124-TYPE AMPLIFIERS
TESTS AND ADJUSTMENTS

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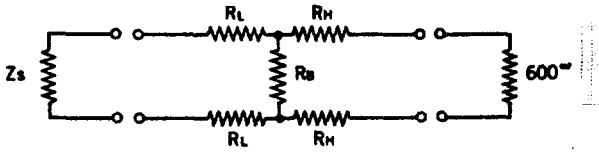
1. GENERAL

1.01 This addendum is being reissued to change the rating from Provisional to Standard. Issue 2, dated February 1941 was issued to modify certain of the resistance values in Fig. 1. The addendum supplements those parts of the information contained in Section 024-104-500 which deal with the tests of gain and frequency characteristics of the 124C and 124D amplifiers. These tests as set up in the section specify a source impedance of 50 ohms under one condition for the 124C amplifier and source impedances of either 30 ohms or 120 ohms for the 124D amplifier. Such source impedances can readily be derived from a 600-ohm source of testing power by means of impedance matching pads. Suggested constants for 20 db pads of the proper ratios are shown in Fig. 1.

1.02 Where the provision of impedance matching pads is not practicable or justified by the amount of testing work to be done at a particular point, the characteristics of the 124C and 124D amplifiers can be checked with a 600-ohm source of testing power by making the tests as described below.

1.03 Information is also given regarding the performance of the 124-type amplifiers when used with a G-type bridge, employing the arrangements described in Addendum 024-104-100.



Zs	RL		RH		RB	
	OHMS	TYPE	OHMS	TYPE	OHMS	TYPE
30	1.75	18HK	292	19LT	27	½19NA
50	8	18GU	288	19EP	35	½19EJ
120	34	½19LR	279	19AG	54	½19KD

NOTE:
Z_s = Source Impedance
Values of resistance in ohms are theoretical values. Type of resistances shown will closely approximate these values

Fig. 1 – Constants of 20 db Impedance Matching Pads

2. TESTS AND ADJUSTMENTS

(A) Gain Tests

124C Amplifier

2.01 Measure the 1000-cycle gain using input terminals 1-2 with the gain control set for maximum gain employing a source impedance of 600 ohms. Under these conditions the gain should be 57.5 ± 2 db. Turning the gain control to position 5 the gain should then be 20 ± 4 db lower than the maximum gain previously measured.

124D Amplifier

2.02 Measure the 1000-cycle gain using input terminals 1-3 with the gain control set for maximum gain employing a sending source impedance of 600 ohms. Under these conditions the gain should be 115 ± 2 db. Turn the gain control to position 5. The gain should then be 20 ± 6 db lower than the maximum gain previously measured.

(B) Gain Frequency Tests

124C Amplifier

2.03 Measure the gain using input terminals 1-2 and a 600-ohm source with the gain control set for maximum gain at frequencies of 100, 300, 1000 and 5000 cycles. The deviation in gain from the 1000-cycle value should be:

FREQUENCY	DEVIATION IN GAIN
100	−7.8 ±2 db
300	−1.5 ±1 db
5000	+1.4 ±1 db

124D Amplifier

2.04 Measure the gain using input terminals 1-3 and a 600-ohm source with the gain control set for maximum gain at frequencies of 100, 300, 1,000 and 5,000 cycles. The deviation in gain from the 1000-cycle should be:

FREQUENCY	DEVIATION IN GAIN
100	−1 ±1 db
300	0 ±1 db
5000	−3.4 ±1 db

2.05 In view of the fact that the tests discussed above are made under conditions of a source impedance different from that which the amplifiers are designed to work, the results of the tests are not to be construed as representing the actual characteristics of the amplifiers under operating conditions but merely as an indication that the condition of the amplifier is satisfactory.

(C) Use of G-Type Bridge

2.07 Where G-type bridges are used on the output of the 124-type amplifiers, the test procedures will be the same as for the amplifier alone except that a bridge outlet will be used instead of the amplifier output. The expected results will be the same with the following exceptions:

GAIN

Reduced 14 db for +14 vu outlet
20 db for + 8 vu outlet

OUTPUT NOISE

Reduced 14 db for +14 vu outlet
20 db for + 8 vu outlet